

# Waste Free Communities

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## 1. Introduction

The quest for Solid Waste Management in Kathmandu valley has reached a critical state in July 2000 with large dumps of Solid Waste lying in main streets and the Government and Kathmandu Municipality being totally in disarray to handle it. Several of the Stakeholder groups and private sector consumer organizations are coming out in the streets demonstrating their concern on the worsening institutional capacity.

The history of difficulties of management of the Solid Waste issues goes back to 1991 when the Donor's support to the then Solid Waste Management and Resource Mobilization Centre was terminated and neither the government nor the municipalities in the Valley were able to extend the support. The request for a contribution of NPR ten per capita per year was turned down by the Municipalities as unaffordable prices and the municipalities went ahead to handle the Solid Waste management at their own risk. They considered the issue could be managed with less technical efforts and less resource. Today, the Municipalities spend over NPR 150 million per year and still the issues remain grossly unmanageable.

This is a typical example of large conflict in interest between the role of the OWNER and the SERVICE PROVIDER, and lack of professional liability.

## 2. The Concept ZERO Waste

The recent development of issue in Kathmandu in relation to the landfill sites and the disposal of solid waste has indicated that there is no more attraction for managing landfill sites and probably none of the neighborhoods in and around Kathmandu will allow landfill sites to be operated. The Gokarna site has been saturated and over used. Local residents will not permit the Okharpauwa, Ramkot and Siuchatar sites to be used as landfill sites and they cannot be utilized unless the infrastructure required for transportation, scientific processing and treatment as sorting, composting or incineration and finally dumping at landfill site is in operation. The dumping of mixed waste in Sisdol is the recent phenomenon but how many holes in the Earth will be required to dump the waste from the cities and how many years it will be accepted by the rural masses. Only the time will show.

The Zero Waste Concept, developed in USA and largely used world wide, is proposed as an appropriate method for Nepal that is capable to overcome the ever-rising hazards from the traditional ways of solid waste management. The concept invites for managing the solid waste at the source of its generation through application of measures which will return the waste to its source of generation and reduce the waste practically to nil and need for landfill sites will be minimized. The waste generation at the source is monitored and managed by following ways:

- Composting of organic waste at domestic level or in the source of waste generation
- Agricultural Waste – Composting at Farmland
- Separation of Reusable items – Furniture, TV, Motorcycle, gadgets – sending to re-users or manufacturers
- Separation of Recyclable items – Paper, Wood, Metal, Glass, Leather, Plastic, Textile, Batteries, Tire and Tubes – Sending back to manufacturers
- Construction debris – use to fill land reclamation areas
- Preventing mixing of various categories of waste at source of generation of the waste,
- Preventing dumping on streets and double handling
- Collection from door to door or receiving at specialized stations.

## 3. The Campaign

The Campaign being proposed here has two different strategies:

- Immediate Strategy comprises of issuing mass request to General Public:
  - To develop restraint and **refrain from dumping on streets** or public place;
  - To Segregate various waste, **not to mix them out, not to burn and not bury under ground;**
  - To utilize the energy of concern of various groups for mass education and awareness campaign instead of the protest rallies;
  - To separate various waste and deliver to the special trucks collecting special items or to specialized collecting stations;
  - To compost the food and agricultural products at domestic level using miniature biogas plant;
  - To dispose construction debris at specially designated fill sites.
- Medium Term Strategy will comprise of:
  - Establishing NGO to deliver specialized services of collecting and delivery of the waste to the source of their generation;
  - Developing agricultural waste digesting system as Bio-gas plant and sewage digesters
  - Develop land reclamation areas for filling with construction debris.

### 3. Concept of Waste Management at Source

The Concept of Waste Management at Source is popularly known as Zero Waste Approach. As practiced today, the concept has **six strong legs**:

- ❖ **Avoiding Bringing Home unnecessary Items**
- ❖ **Production of Clean Waste**
- ❖ **Sending back the Waste to its original source of generation**
- ❖ **Disposal Ban of the Waste in public place or nature**
- ❖ **Mass participation by the communities for management of the waste source**
- ❖ **Rethinking on the methods of final disposal.**

#### 4. Avoiding Taking Home Unnecessary Items

This is a very important step since the volume of waste materials taken home will affect the approach of waste management at home. The Households shall consider the ways to reduce taking home unwanted waste materials. For example, the leaves of vegetables may be left at the vegetable market or ask the seller to take it back.

#### 5. Production of Clean Waste

The Waste when produced at households or Industries or Markets is basically free of contaminants and clean. For example, the kitchen waste as vegetable waste or fruit waste or food waste is clean. The paper or plastic or cloth or construction debris is clean. Producing clean waste is fundamental to eliminate the Solid Waste hazard and producing clean materials for recycling industries or compost plants.

#### 6. Sending Back to the Original Source of generation

The clean waste produced is send back to the source of generation for reuse, or recycling reducing the multiple handling of waste, reducing environmental burden to the nature or the urban area. This is the key factor to protect the environment from the negative impact of Solid Waste Hazard.

#### 7. Disposal Ban in public place or nature

The remaining waste basically comprises of non-usable, non-recyclable items that need to be specifically handled. The items like infectious waste from Hospitals and construction debris are sent to particularly designated places as autoclave or reclamation areas or landfill sites. Special precaution is taken so that the environmental hazard is minimised.

#### 8. Community Based Management

Solid Waste is produced every day by the masses in rural or urban communities and currently disposed as garbage. The municipalities spend a lot of resources for collection and disposal of the garbage to land fill sites or nature contributing to large-scale environmental damage. This process could be reduced or reverse with community participation by following the 3 legs described above. If community enthusiasm could be sensitised and encouraged the need for collection and disposal of garbage is reduced to great extent and the environmental hazard is practically eliminated. The Community participation in mass is possible through development of Public-Private Partnership or Private-Private Partnership leading to a sustainable institutional set up. The 3P approach becomes a fundamental point in the Solid Waste Management.

## 9. Composting in a Bin for Households

The composting in a bin would be the first step towards application of Zero Waste Approach for Waste Management. A typical design of Compost bin is presented in following pictures. It is a kind of user-friendly design and needs very little attention of the house owners. The bin is different from the common bin used in town. With a capacity of active composting of about 120 liters, the bin would be adequate for consuming food and green waste for a family of 5 persons and will serve as perennial composting instrument without a break.

The operation is very simple. Drop the kitchen and food wastes in the bin (*except meat products that attract pests and pet waste that contains pathogens harmful to human health*) and collect the matured compost from the bottom after three months. This is a perpetual process. The user needs some technical information as user's manual and technical guide that may be collected from Zero Waste Nepal.

The advantages of using the Composting Bin are:

- Elegant, neat and clean, easy to handle, good for placing near Kitchen on the Terrace or Balcony, and garden
- Saves time and effort of the attendant;
- Attracts no pests and insects as flies, No leachet flow and foul smell as it is well ventilated from inside;
- The final product compost is non-contaminated and contains high nutrients as carbon, Nitrogen, Phosphor and Potassium (CNKP) and very good for soil conditioning and ready for use for pot culture and kitchen garden
- Contributes to save NRs. 250/family/annum to Municipality;
- Contributes to keep the neighborhood clean and reduce burden on landfill site
- Help to produce clean recyclable waste as clean Plastics, Paper and Metal
- Generates additional income/Family/year at the rate of NRs 1000 from sales of Recyclable materials and NRs. 250 from compost),
- The Community gets advantage of being advanced Contributor to the campaign of Zero Waste Society.



# Waste Free Communities

A community Based Solid Waste Management Initiatives

**Don't Throw Away, Don't Burn,  
Don't Bury, Send Back**



## The future shape of our planet!

- *Thousands of trees are chopped each year, to get us a piece of paper and pencil, construction of roads, electricity and telephone lines,*
- *Hundreds of Sq. Kilometers of our land is blasted away in mining, quarrying and petroleum exploration. Scores of villages are displaced for our water needs.*
- *Hundreds of tones of earth must be 'fed' to plants that give us fruit and vegetable.*
- *Billions of liters of oil and gas are sucked out of the Earth and burned for our fuel, plastics, synthetic fabrics, chemicals..., which we burn again to poison our skies.*
- *Our Earth is getting over-heated by the sun, from a build-up of carbon in the atmosphere.*
- **Substances meant to improve our lives are poisoning our water, making our soil infertile as we go on dumping and burning!**

**WE MUST STOP THIS AND WE CAN –  
Yes, and in simple steps, taken each day**

### By Applying Zero Waste Concepts:

1. Prevent Bringing Home Unnecessary Items
2. Promote Composting of all organic wastes at Domestic Level and Restore soil
3. Separate Waste at Source and Produce Clean Waste
4. Don't Throw Away Waste in Nature or Public Places
5. Don't Burn. The toxic emission comes back through Food chain
6. Don't Bury. Burial contaminates Ground Water and Land for Ever
7. So No to Landfill and Dumping Sites
8. Use more of eco-friendly materials and Support all Zero-waste efforts
9. Practice organic gardening or farming - at any scale

Aim for Zero Waste - It pays.

If you are not for Zero Waste, How much Waste you are for?

